GOVERNMENT OF INDIA
WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION
LOK SABHA

STARRED QUESTION NO:230
ANSWERED ON:01.12.2016
Exploitation of Ground Water
Singh Shri Ravneet

Will the Minister of WATER RESOURCES, RIVER DEVELOPMENT AND GANAGA REJUVENATION be pleased to state:

(a) whether the Central Ground Water Board has assessed ground water resources in the country including Punjab during the last three years and if so, the details thereof;

(b) the number of blocks where ground water resources were found to be overexploited/depleted/contaminated and declared as dark zone, State/UT-wise;

(c) whether the Government has any mechanism to determine the number of tubewells which can be drilled for irrigation purposes without affecting the underground water table in the country particularly in Punjab, and if so, the details thereof; and

(d) the corrective steps taken/to be taken by the Government to chek the over exploitation of ground water?

Answer

THE MINISTER FOR WATER RESOURCES, RIVER DEVELOPMENT AND GANGA REJUVENATION
(SUSHRI UMA BHARTI)
(a) to (d) A statement is laid on the Table of the House.

STATEMENT REFERRED IN REPLY TO PARTS (a) TO (d) OF STARRED QUESTION NO. *230 TO BE ANSWERED ON 01.12.2016 IN LOK SABHA REGARDING "EXPLOITATION OF GROUND WATER" ASKED BY SHRI RAVNEET SINGH, HON'BLE M.P :

(a) Central Ground Water Board carries out periodic assessment of replenishable ground water resources jointly with the State Government Departments of the Country including Punjab. As per the latest assessment, the total annual replenishable ground water resource of the Country is around 433 Billion Cubic Metres (BCM). The net annual ground water availability is 398 BCM out of which annual ground water utilization (draft) is estimated as 245 BCM and stage of ground water development/exploitation is 62%. State-wise details are given at Annexure-I.

(b) Out of the total 6607 assessment units (Blocks/ Mandals/ Talukas/ Firkas/Districts) assessed in the country, 1071 units are categorised as 'Over-Exploited'. State-wise details are given at Annexure −II. State-wise details of the blocks in the Country including Punjab, where high occurrence of various geo-genic contaminants is observed in ground water is given at Annexure-III.

(c) Ground Water Resources Estimation (GEC-1997) methodology outlines a procedure for estimating ground water availability for future irrigation use. Ground water availability for future irrigation is worked out by deducting the existing draft for irrigation and projected demand for domestic and industrial use upto 2025 from the net annual ground water availability.

As per the ground water resource assessment 2011, ground water availability for future irrigation use for India as a whole is 154.71 BCM and that of Punjab is -14.83 BCM. Negative values indicate that overall ground water demand in the state exceeds annual availability.

(d) Measures taken up by the Central Government to check over exploitation of ground water in the Country include :

â€¢ The National Water Policy (2012) formulated by Ministry of Water Resources, RD & GR, inter-alia, advocates conservation, promotion and protection of water and highlights the need for augmenting the availability of water through rain water harvesting, direct

use of rainfall and other management measures. The National Water Policy (2012) has been forwarded to all State Governments/ UTs and concerned Ministries/ Departments of Central Government for adoption.
â€¢ This Ministry has circulated a Model Bill to all the States/UTs to enable them to enact suitable ground water legislation for its regulation and development which includes provision of rain water harvesting. So far, 15 States/UTs have adopted and implemented the ground water legislation on the lines of Model Bill. In addition, 30 States/UTs have made rain water harvesting mandatory by enacting laws or by formulating rules & regulations or by including provisions in Building bye-laws or through suitable Government Orders.

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â€¢ Central Ground Water Authority (CGWA) has been constituted under "The Environment (Protection) Act, 1986" for the purpose of regulation and control of ground water development and management in the Country. So far, CGWA has notified 162 areas in the Country for the purpose of regulation of ground water. Under the CGWA guidelines, in notified areas, no permission is accorded to extract ground water through any energized means for any purpose other than drinking water. However, for non-notified areas, ground water withdrawal by industries is regulated by means of guidelines/criteria as specified as CGWA.
â€¢ CGWB has also prepared a conceptual document entitled "Master Plan for Artificial Recharge to Ground Water in India" during 2013. The Master Plan envisages construction of 1.11 Crore rain water harvesting and artificial recharge structures in the Country at an estimated cost of Rs. 79,178 Crores to harness 85 BCM (Billion Cubic Metre) of water. The augmented ground water resources will enhance the availability of water for drinking, domestic, industrial and irrigation purpose. The Master Plan has been circulated to all State Governments for implementation.
â€¢ The Department of Rural Development has prioritized work related with Natural Resources Management (including water harvesting) under MGNREGA and has issued a joint framework with this Ministry and Department of Land Resources. For FY 2016-17, the States have taken up a target of 8,82,325 farm ponds.
â€¢ CGWB has taken up Aquifer Mapping and Management programme during XII Plan, under the scheme of Ground Water Management and Regulation. The Aquifer Mapping is aimed to delineate aquifer disposition and their characterization for preparation of aquifer/area specific ground water management plans with community participation.
â€¢ Ministry of Urban Development has circulated its Model Building Bye-Laws (2016) to all State Governments which, inter-alia, incorporates provisions for Rain Water Harvesting.
â€¢ Ministry of Environment, Forest and Climate Change have merged two separate programmes, namely, National Lake Conservation Plan (NLCP) and National Wetland Conservation Programme (NWCP) into a new Integrated Scheme of National Plan for Conservation of Aquatic Eco-Systems (NPCA) for conservation and management of identified lakes and wetlands in the country.
â€¢ CGWB has been organizing mass awareness programmes in the country to promote rain water harvesting and artificial recharge to ground water.

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ANNEXURE-I
Annexure referred in reply to Part (a) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

State-Wise Ground Water Resources Availability, Utilization and Stage of Development in India
(As On 2011)

Sl. No. States / Union Territories Annual Replenishable Ground Water Resource Natural Discharge during non-monsoon season Net Annual Ground Water Availability Annual Ground Water Draft Stage of Ground Water Development (%)
Irrigation Domestic and industrial uses Total

States
1 Andhra Pradesh 20.7892 1.9064 18.8828 6.2694 0.7381 7.0075 37
2 Telangana 15.098 1.4138 13.6844 6.9103 0.5919 7.502 55
3 Arunachal Pradesh 4.5100 0.4500 4.0600 0.0020 0.0010 0.0030 0.08
4 Assam 28.5200 2.7300 25.7900 2.8600 0.6400 3.4900 14
5 Bihar 29.3350 2.4705 26.8645 10.2550 1.6960 11.9509 44
6 Chhattisgarh 12.4200 0.7900 11.6300 3.4300 0.6200 4.0500 35
7 Delhi 0.3105 0.0234 0.2871 0.1402 0.2519 0.3922 137
8 Goa 0.2424 0.0970 0.1454 0.0101 0.0311 0.0411 28
9 Gujarat 18.5686 0.9832 17.5854 10.7477 1.1074 11.8551 67
10 Haryana 10.7800 0.9900 9.7900 12.3500 0.7100 13.0500 133
11 Himachal Pradesh 0.5590 0.0280 0.5311 0.2506 0.1272 0.3778 71
12 Jammu & Kashmir 4.2512 0.4251 3.8261 0.1988 0.6077 0.8065 21
13 Jharkhand 6.3100 0.5500 5.7600 1.3100 0.5500 1.8600 32
14 Karnataka 17.0266 2.2154 14.8112 8.5916 0.8198 9.4114 64
15 Kerala 6.6864 0.6134 6.0730 1.3046 1.5310 2.8355 47
16 Madhya Pradesh 35.0406 1.7520 33.2886 17.4809 1.3527 18.8335 57
17 Maharashtra 33.9474 1.7955 32.1519 16.1460 1.0293 17.1754 53
18 Manipur 0.4401 0.0440 0.3961 0.0033 0.0007 0.0040 1.02
19 Meghalaya 1.7805 0.1780 1.6024 0.0015 0.0002 0.0017 0.08

20 Mizoram 0.0304 0.0030 0.0273 0.0000 0.0010 0.0010 3.52
21 Nagaland 0.6159 0.0616 0.5543 0.0000 0.0340 0.0340 6.13
22 Odisha 17.7768 1.0859 16.6909 3.8126 0.9162 4.7288 28
23 Punjab 22.5300 2.2100 20.3200 34.1700 0.7100 34.8800 172
24 Rajasthan 11.9414 1.1125 10.8290 13.1332 1.7098 14.8430 137
25 Sikkim* - - 0.0442 0.0027 0.0086 0.0113 26
26 Tamil Nadu 21.5326 2.1533 19.3793 13.1688 1.7638 14.9326 77
27 Tripura 2.5866 0.2286 2.3580 0.0932 0.0694 0.1626 7
28 Uttar Pradesh 77.1900 5.5300 71.6600 48.7400 4.0400 52.7800 74
29 Uttarakhand 2.0403 0.0449 1.9954 1.1033 0.0298 1.1331 57
30 West Bengal 29.2511 2.6688 26.5823 9.7195 0.9731 10.6926 40
Total (States) 432.11 34.55 397.60 222.21 22.66 244.85 62
Union Territories
1 Andaman & Nicobar 0.3080 0.0216 0.2865 0.0006 0.0121 0.0127 4.44
2 Chandigarh 0.0216 0.0022 0.0194 0.0000 0.0000 0.0000 0
3 Dadra& Nagar Haveli 0.0622 0.0031 0.0591 0.0072 0.0056 0.0129 22
4 Daman & Diu 0.0181 0.0012 0.0169 0.0145 0.0019 0.0164 97
5 Lakshadweep 0.0105 0.0070 0.0035 0.0000 0.0023 0.0023 67
6 Puducherry 0.1893 0.0190 0.1703 0.1237 0.0293 0.1530 90
Total (UTs) 0.6100 0.0500 0.5600 0.1500 0.0500 0.2000 36
Grand Total 432.7200 34.6000 398.1600 222.3600 22.7100 245.0500 62

* Note: Net ground water availability in Sikkim has been estimated based on spring discharge and is not reflected in the corresponding total annual replenishable resource. This results in a difference of 0.044 bcm in the State Total and Grand Total.

ANNEXURE − II
Annexure referred in reply to Part (b) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

Categorization Of Blocks/ Mandals/ Talukas /Firkas In India As Per Dynamic Ground Water Resources Assessment
(2011)
Sl.No. States / Union Territories Total No. of Assessed Units Safe Semi-critical Critical Over-exploited Saline
Nos. % Nos. % Nos. % Nos. % Nos. %
States
1 Andhra Pradesh 662 534 81 42 6 7 1 41 6 38 6
2 Telangana 448 343 77 55 12 8 2 42 9 0 0
3 Arunachal Pradesh 11 11 100 0 0 0 0 0 0 0 0
4 Assam 27 27 100 0 0 0 0 0 0 0 0
5 Bihar 533 522 98 11 2 0 0 0 0 0 0
6 Chhattisgarh 146 125 86 18 12 2 1 1 1 0 0
7 Delhi 27 2 7 5 19 2 7 18 67 0 0
8 Goa 20 20 100 0 0 0 0 0 0 0 0
9 Gujarat 223 171 77 13 6 5 2 24 11 10 4
10 Haryana 116 23 20 7 6 15 13 71 61 0 0
11 Himachal Pradesh 8 5 63 0 0 2 25 1 13 0 0
12 Jammu & Kashmir 14 14 100 0 0 0 0 0 0 0 0
13 Jharkhand 210 199 95 5 2 0 0 6 3 0 0
14 Karnataka 270 152 56 34 13 21 8 63 23 0 0
15 Kerala 152 126 83 23 15 2 1 1 1 0 0
16 Madhya Pradesh 313 218 70 67 21 4 1 24 8 0 0
17 Maharashtra 353 325 92 16 5 2 1 10 3 0 0
18 Manipur 8 8 100 0 0 0 0 0 0 0 0
19 Meghalaya 7 7 100 0 0 0 0 0 0 0 0
20 Mizoram 22 22 100 0 0 0 0 0 0 0 0
21 Nagaland 8 8 100 0 0 0 0 0 0 0 0
22 Odisha 314 308 98 0 0 0 0 0 0 6 2
23 Punjab 138 22 16 2 1 4 3 110 80 0 0
24 Rajasthan 243 25 10 20 8 24 10 172 71 2 1
25 Sikkim 4 4 100 0 0 0 0 0 0 0 0
26 Tamil Nadu 1129 437 39 235 21 48 4 374 33 35 3
27 Tripura 39 39 100 0 0 0 0 0 0 0 0
28 Uttar Pradesh 820 559 68 82 10 68 8 111 14 0 0
29 Uttarakhand 18 11 61 5 28 2 11 0 0 0 0
30 West Bengal 271 217 80 53 20 1 0.37 0 0 0 0
Total States 6554 4484 68 693 11 217 3 1069 16 91 1
Union Territories
1 Andaman & Nicobar 36 36 100 0 0 0 0 0 0 0 0
2 Chandigarh 1 1 100 0 0 0 0 0 0 0 0

3 Dadra & Nagar Haveli 1 1 100 0 0 0 0 0 0 0 0
4 Daman & Diu 2 0 0 1 50 0 0 1 50 0 0
5 Lakshadweep 9 6 67 3 33 0 0 0 0 0 0
6 Puducherry 4 2 50 0 0 0 0 1 25 1 25
Total (UTs) 53 46 87 4 8 0 0 2 4 1 2
Grand Total 6607 4530 69 697 11 217 3 1071 16 92 1

ANNEXURE − lll

Annexure referred in reply to Part (b) of the Lok Sabha Starred Q.No. 230 dated 01.12.2016 regarding "Exploitation of Ground Water"

State-Wise Details Of Blocks With Geogenic Contaminants In Ground Water

Sl. No No. of States No. of Blocks affected
Salinity
(EC above 3000 micro mhos/ cm) Fluoride
(above 1.5 mg/l) Nitrate
(above 45 mg/l) Arsenic
(above 0.01 mg/l) Iron
(above 1 mg/l)
1 Andhra Pradesh 65 117 162 4 34
2 Telangana 17 215 115 2 38
3 Assam* 0 9 0 19 18
4 Arunachal Pradesh* 0 0 0 0 4
5 Bihar 3 141 26 78 32
6 Chhattisgarh 0 29 33 1 9
7 Delhi 11 10 14 2 0
8 Goa 0 0 0 0 2
9 Gujarat 104 69 143 22 46
10 Haryana 34 91 45 26 45
11 Himachal Pradesh 0 0 8 1 0
12 Jammu & Kashmir 0 2 11 7 22
13 Jharkhand 0 38 16 3 7
14 Karnataka 114 118 160 7 116
15 Kerala 15 10 35 0 74
16 Madhya Pradesh 22 79 260 25 127
17 Maharashtra 25 32 158 0 28
18 Manipur* 0 0 0 2 0
19 Meghalaya* 0 0 0 0 0
20 Nagaland* 0 0 0 0 0
21 Odisha 42 68 38 1 91
22 Punjab 14 43 50 24 43
23 Rajasthan 87 203 123 1 58
24 Tamil Nadu 70 51 154 14 10
25 Tripura* 0 0 0 0 4
26 Uttar Pradesh 35 74 180 121 26
27 Uttarakhand 0 0 9 0 0
28 West Bengal 59 43 7 90 331
29 Andaman & Nicobar 1 0 0 0 6
30 Dadra & Nagar Haveli 0 0 1 0 0
31 Chandigarh 0 0 0 0 0
32 Daman & Diu 2 0 1 1 1
33 Puducherry# 0 0 2 0 0
34 Lakshadweep^ 0 3 0 0 0
Total 720 1445 1751 451 1172
*District as unit of survey, # Region as unit of survey, ^ Island as unit of survey.
Note: Data Source is CGWB survey upto May2015 and reports